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# Concerning some West American fungi

DAVID GRIFFITHS

The following species from my personal collections of the past four or five years appear to be new or worthy of record :

### **Sclerospora Farlowii** sp. nov.

Fructification of fungus in leaf-sheaths, especially in the upper expanded one, less frequently in the leaves and culms, and rarely in the spikes ; forming irregular grayish-black discolorations which are darker around the edges of the infected area ; oöspores subglobose, 28 to 45 $\mu$ in diameter, deep dark reddish-brown, and often appearing black and opaque, imbedded in tissues of the host, and when isolated having a few irregular fragments of mycelial tissue adhering.

On *Chloris elegans* H.B.K., Cochise, Arizona, October, 1900.

This is one of the commonest fungi throughout southern Arizona and northern Sonora. Several small collections have been made of it by myself. It has been seen many times. Invariably the mode of attack is the same whether it is abundant or not. The effect upon the plant is never serious so far as my observation goes. Indeed, no case has been observed where it was thought that the plants were at all reduced in size by the parasite.

The type is a specimen so marked from the above collection in my private herbarium. A duplicate is in the herbarium of the United States Department of Agriculture, and the same thing is in the herbarium of Professor W. G. Farlow, who has examined the species and to whom it is dedicated.

### **Ustilago Microchloae** sp. nov.

Sori in the inflorescence whose parts are transformed into a jet-black, shining mass in which the individual spikelets are plainly distinguishable, or the entire surface of the rachis and spikelets may be involved in one continuous sorus extending the entire length of the inflorescence, which may be of normal length when only individual florets are affected, or very much shortened in other cases ; spores subglobose, ovoid, and often irregular, very variable, 12 to 18 $\mu$ in diameter, shiny jet-black in mass, dark-brown to almost opaque by transmitted light; epispore thin, smooth, contents granular, which is obscured at maturity.

On *Microchloa indica* (L.) Kuntze, on the deserts near San Luis Potosi, Mexico, June, 1904. The species is common in the San Luis Potosi and Aguas Calientes region.

### USTILAGO BOUTELOUAE K. & S.

This species, which is not at all well represented in collections, appears to be quite common, and even abundant, in certain localities. My experience with it indicates that it is at home in high altitudes. In 1904, large quantities of it were found in the San Francisco Mountains of Arizona, at an altitude of about 7500 feet, upon *Bouteloua prostrata* Lag. Large areas were found where practically all of the plants were affected. Other collections have been made near the City of Zacatecas, Mexico, at an altitude of nearly 8,000 feet, and the species has been seen in several situations in the Federal District of Mexico on the same host. My material has somewhat larger and darker-colored spores than specimens which have been examined upon *Bouteloua oligostachya* from Kansas.

### USTILAGO HETEROGENA P. Henn.

This species appears from my collections to be exceedingly variable in spore-characters, especially in so far as color and echinulation are concerned. Several collections have been made on *Leptochloa mucronata* and on *L. viscida*, all from the general region extending from twenty miles south of Altar, in the Mexican state of Sonora, to Tucson, Arizona. It is quite frequent in this region.

### USTILAGO CYNODONTIS P. Henn.

So far as I know this is the first record of this species for this country. It corresponds perfectly with the original description, as well as with the specimen in Sydow's Ustilagineen *no. 304*. It appears to be most closely related to *Ustilago hypodytes* (Schl.) Fr. It has not been seen except at Santa Rosa, California, in 1905. Here it was the exception rather than the rule to find Bermuda grass (*Cynodon dactylon* Pers.) lawns free from this smut. In many instances it would have been difficult to find unaffected plants. In the majority of cases seed-production was practically destroyed by it.

### **Sorosporium ovarium** sp. nov.

Sori in ovaries which are but slightly enlarged, covered by a grayish-brown membrane of plant tissue which ruptures irregularly at the apex exposing the black dusty spore-mass; spore-balls rather firm, irregular, angular-compressed, 50 to 100 μ in greatest diameter; spores subglobose to angular-compressed, 8 to 12 μ in greatest diameter, with thin minutely echinulate epispore.

On *Panicum caespitosum* Swartz, Dublan, Hidalgo, Mexico, September 9, 1905; also on the same host at Puebla, Mexico, August 29, 1906. The above are collections which have been made. The species has been observed on the same host in various localities upon the plateau of Mexico, especially in the vicinity of the Federal District. The species is closely related to *S. Eriochloae* Griff., and, indeed, was collected for that species, so similar are the two in external appearance. It is distinguished from that species, however, by its smaller and minutely echinulate spores.

### **Urocystis Sophiae** sp. nov.

Fructification of the fungus occurring most commonly upon the upper portion of the roots, about 2 cm. below the surface of the ground, but it may occur upon any portion of the root-system, forming wart-like tubercles of irregular shape, measuring from 1 mm. to 1 cm. in greatest diameter; spore-balls irregular in size, from 30 to 45 μ in diameter, firmly united, consisting of from one to four or more cells which are subglobose or angular-flattened by compression, about 15 μ in diameter and completely surrounded by mostly a single layer of hyaline or slightly tinted cells about 3 μ in diameter; all imbedded in a hyaline fungus-tissue apparently formed of anastomosing and agglutinated mycelial threads.

On roots of *Sophia andrenarum* Cockerell, Tucson, Arizona, March 14, 1903. This was first collected in 1901 along the Santa Cruz River near Tucson, Arizona, but the later collection is made the type because the material is more abundant. This, I believe, is the first record of a root smut in this country.

### UROCYSTIS AGROPYRI (Preuss) Schröt.

Quite common on *Melica imperfecta* Trin., at Banning, California, May, 1906. I have also collected it on *Koeleria* sp., on the top of Mt. Lemmon, Arizona, in 1904, where it was so prevalent as to render it difficult to secure enough of the host for identification.

### **Aecidium Cannonii** sp. nov.

Spermogonia mostly epiphyllous, minute, reddish-brown, confined to a central area, which early dies and turns brown, and from which aecidia may or may not be excluded ; aecidia hypophyllous, about 1 mm. long, developing centrifugally, commonly beyond the spermogonial area, but sometimes occupying it also, opening at the apex with a lacerated recurved margin ; spores irregularly polyhedral, or simply angular by compression, commonly 24 by 30 $\mu$ and again about 20 by 30 $\mu$ with epispore uniformly thick (about 3 $\mu$), subhyaline, minutely rugose with coarsely granular contents.

The central area of the spot upon the leaf dies early and turns brown as stated above. Sometimes the aecidia develop in the lower side of this area, but commonly only beyond it. The brown area is surrounded by an irregularly blackened zone extending a short distance beyond the aecidia. The spots are commonly 1 cm. or less in diameter. It is quite probable, however, that the seasonal variation may have a decided influence upon the character of the spot formed. As is well known, this plant drops its leaves on the advent of dry weather. If the wet season should happen to be prolonged it might cause a decided difference in the appearance of the attack. I take pleasure in dedicating the species to Dr. W. A. Cannon, who was the first to collect it, and who directed where I could find it.

On leaves of *Fouquieria splendens* Engelm., in Sabiño Cañon, Santa Catalina Mountains, Arizona, September 10, 1904.

### AECIDIUM SARCOBATI Peck

Present mycological practice of considering fungi on diverse hosts distinct might, in the absence of field notes, lead to the establishment of a different species upon *Nitrophila occidentalis* from that growing on *Sarcobatus*. The hosts were found growing together at Smoke Creek, Nevada, in August, 1902, and both loaded with aecidia. The peridia of the form on *Nitrophila* are slightly smaller than those on *Sarcobatus*, but there are no other differences.

### **Puccinia Eurotiae** sp. nov.

Sori persistently hypophyllous, circular, usually aggregated and forming an entire black covering over a large section of the lamina of the leaf on each side of the midrib, where they may be elongated or polyhedral by compression, but seldom confluent to such an extent as to lose their individuality; about 1 mm. in diameter, convex, rounded, and about 0.66 to 1 mm. high, at first covered by epidermal tissue and trichomes, but later naked and black; teleutospores oval to obovate, broadly rounded to bluntly pointed above, with comparatively thick epispore either thickened or not at apex, contents subhomogeneous to irregularly guttulate with indistinct nuclear area, 20 to 25 μ by 32 to 42 μ; pedicel long, stout, hyaline, about 120 μ long and 3 μ in diameter, with irregular thickened areas in wall resembling warty excrescences in optical section.

On *Eurotia lanata* Moq., near Lovelock, Nevada, August 10, 1902.

Only two or three badly infested plants were found in this locality. The species has not been observed elsewhere.

UNITED STATES DEPARTMENT OF AGRICULTURE.